

ABSTRACT OF THE DISCLOSURE

An improved acoustic window for an acoustic waveform passage having a generally uniform transmission loss at an angle of incidence of between -40° and $+40^\circ$.

The composition is formed from at least one core layer and at least two septa, with the core
5 layer being a material having a generally low-acoustic-impedance, a static shear modulus between about 1.0 psi (0.007 MPa) and about 15,000 psi (103 MPa), a transverse (or through-thickness) sound velocity for the acoustic waveform of between about 700 and about 2200 meters per second, a transverse acoustic impedance of less than or equal to 4×10^6 kilograms per square meter-second, and a shear loss factor of greater than 0.02, the septa
10 being composed of at least one ply of a material, preferably a graphite fiber reinforced epoxy composition, having a transverse acoustic impedance of less than 60×10^6 kg/m²-sec, a tensile modulus of more than 0.5×10^6 psi, a thickness of less than 0.10λ , and each and being bonded to said core to form a sandwich with said core layer, and the window preferably has a thickness of less than $1.0 \lambda_w$ and the acoustic waveform has a λ of at least
15 0.001 meter and less than 3 meters.